

PATENT ABSTRACTS OF JAPAN

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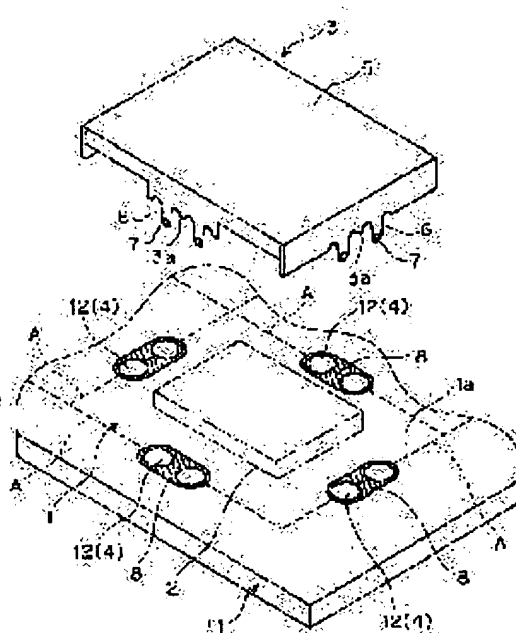
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(54) ELECTRONIC DEVICE WITH SHIELD CASE

(57)Abstract:

PROBLEM TO BE SOLVED: To provide an electronic device with a shield case exhibiting high positional accuracy at the time of fixing the shield case to a board, excellent shield performance and high reliability of mounting.

SOLUTION: Engaging recesses 4 are made in the side face of a board 1 for surface mounting a device 2 and a shield case 3 is provided with a plurality of clicks 6 inserted into the recesses 4. The clicks 6 engage with the recesses 4 while imparting urging force through resiliency so that the board 1 is grasped surely by means of the plurality of clicks 6.



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DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1] It is the perspective view showing the electronic parts with a shielding case concerning 1 operation gestalt of this invention.

[Drawing 2] It is the perspective view showing the manufacture approach of the electronic parts with a shielding case concerning 1 operation gestalt of this invention.

[Drawing 3] It is drawing showing the important section of the shielding case used for the electronic parts with a shielding case concerning 1 operation gestalt of this invention.

[Drawing 4] It is the perspective view showing the modification of the electronic parts with a shielding case concerning 1 operation gestalt of this invention.

[Drawing 5] It is the perspective view showing the modification of the shielding case used for the electronic parts with a shielding case concerning 1 operation gestalt of this invention.

[Drawing 6] It is the perspective view showing the important section of the electronic parts with a shielding case concerning other operation gestalten (operation gestalt 2) of this invention.

[Drawing 7] It is the sectional view showing the important section of the electronic parts with a shielding case concerning the operation gestalt of further others of this invention (operation gestalt 3).

[Drawing 8] It is the perspective view showing the conventional electronic parts.

[Drawing 9] It is drawing showing the manufacture approach of the conventional electronic parts.

[Description of Notations]

1 Substrate

1a Surface mounted device loading side

2 Surface Mounted Device

3 Shielding Case

3a The opposite part of a shielding case

4 Engagement Crevice

4a The step of engagement crevice inner skin

5 Case Body Section

6 Engagement Pawl

7 Height

8 Land Electrode

9 Solder

11 Sheet Substrate (Parent Substrate)

12 Through Hole

17 17a Ups-and-downs section

17b The part projected from the inferior-surface-of-tongue side of the substrate of an engagement pawl

A Line (cutting plane line)

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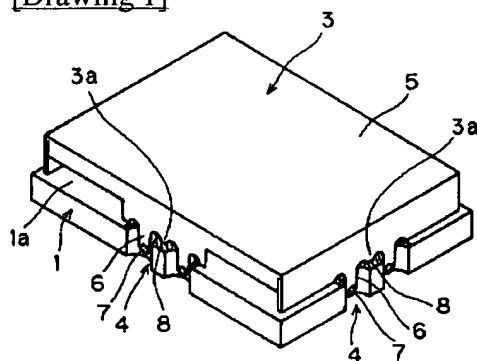
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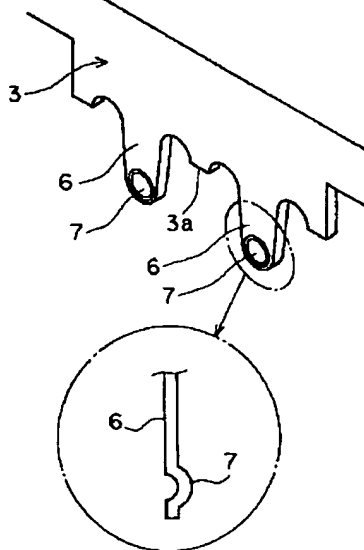
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DRAWINGS

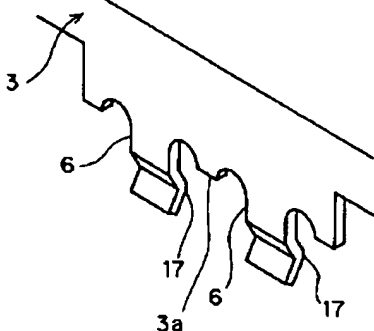
[Drawing 1]



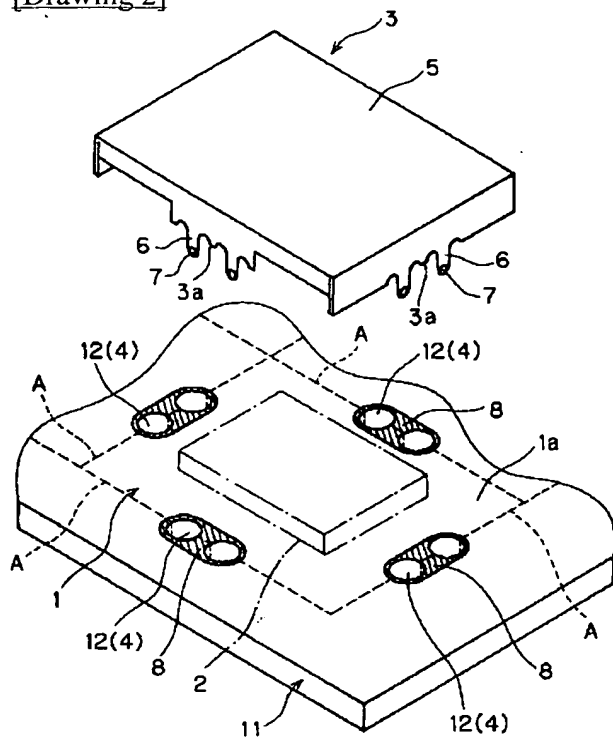
[Drawing 3]



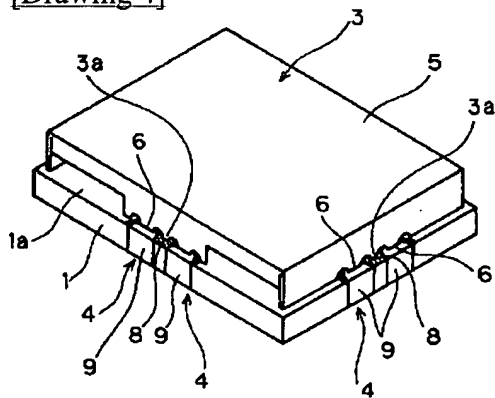
[Drawing 5]



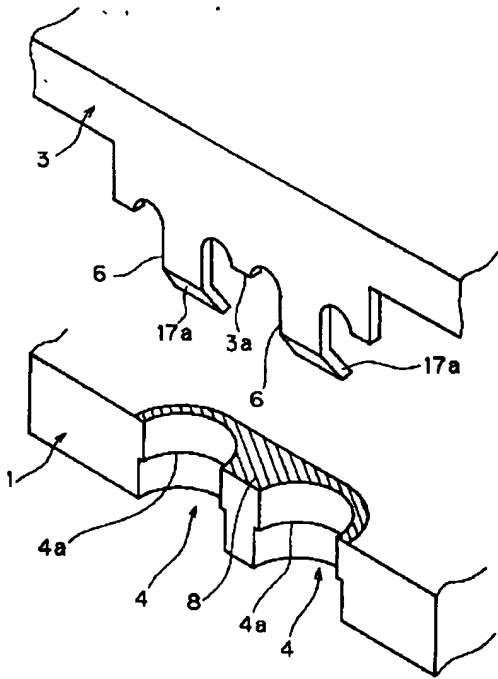
[Drawing 2]



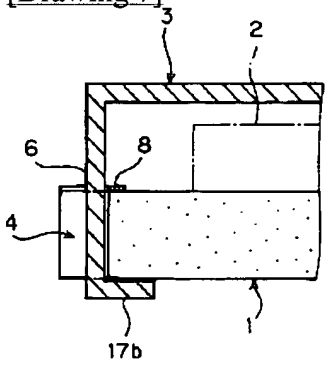
[Drawing 4]



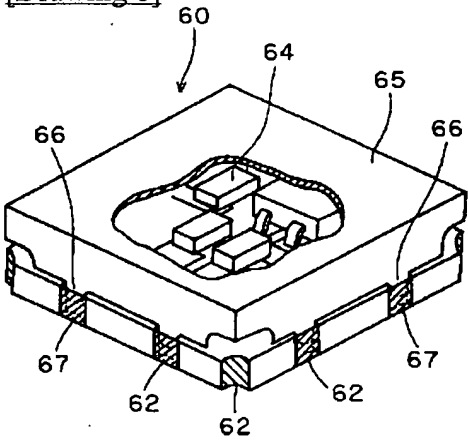
[Drawing 6]



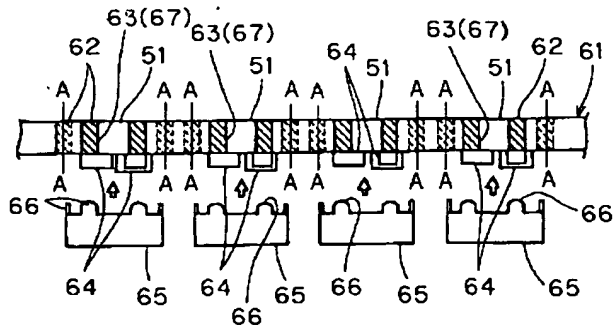
[Drawing 7]



[Drawing 8]



[Drawing 9]



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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to the electronic parts with a shielding case with which the surface mounted device carried on the substrate has the structure held in the shielding case in detail about electronic parts.

[0002]

[Description of the Prior Art] As shown in drawing 8, there are the electronic parts 60 with a shielding case which have the structure which held the surface mounted device 64 in the shielding case 65 among the electronic parts. An approach which is described below is in one of the approaches which manufactures such electronic parts with a shielding case.

[0003] ** As shown in drawing 9, form a through hole 62 in the sheet substrate (parent substrate) 61 equipped with two or more substrates 51 for element placements, and form the shielding case attachment electrode 63 in it at the inner skin (side face) of a through hole 62.

** And carry a surface mounted device 64 on the sheet substrate (parent substrate) 61, and solder a surface mounted device 64 to the land electrode (not shown) of the sheet substrate 61.

** Next, it is filled up with soldering paste 67 in a through hole 62.

** And insert the engagement pawl 66 of two or more shielding cases 65 into the through hole 62 where soldering paste 67 was filled up.

** Subsequently, carry out melting of the solder in soldering paste 67, and solder two or more shielding cases 65 to the sheet substrate 61. In addition, as a shielding case 65 is shown in drawing 8, by being soldered to the electrode 63 (drawing 9) for immobilization in a through hole 62 (shielding case attachment electrode), it connects with the sheet substrate 61 and the engagement pawl 66 is fixed.

** Obtain each electronic parts 60 as shown in drawing 8 by cutting the sheet substrate 61 along with line (cutting plane line) A-A after that by a dicing machine etc.

[0004]

[Problem(s) to be Solved by the Invention] In the case of the above-mentioned conventional approach, however, the through hole 62 formed in the sheet substrate (parent substrate) 61 The diameter is formed more greatly than the width of face of the engagement pawl 66 so that the engagement pawl 66 can be inserted in easily. In the phase of the sheet substrate 61 Since a shielding case 65 will engage with a through hole with a certain amount of backlash (play) when the engagement pawl 66 is inserted in a through hole 62 and a shielding case 65 is attached in the sheet substrate 61, A location gap is produced at a subsequent process and it may have a bad influence on the configuration precision and dimensional accuracy of a product, a shielding property, etc.

[0005] Moreover, after soldering two or more shielding cases 65 to the sheet substrate 61, Also in the phase of each electronic parts 60 (drawing 8) with a shielding case obtained by cutting the sheet substrate 61, at processes, such as reflow soldering at the time of mounting in a printed circuit board etc. The solder which was fixing the engagement pawl 66 to the electrode 63 for immobilization of a through hole 62 remelts, and there is a trouble that it becomes impossible for a location gap to arise in a shielding case 65, or for a shielding case 65 to separate and use it for it from a substrate.

[0006] This invention solves the above-mentioned trouble, its attaching position precision to the substrate of a shielding case is high, it is excellent in the shielding engine performance, and aims at moreover offering electronic parts with a shielding case with high mounting dependability.

[0007]

[Means for Solving the Problem] In order to attain the above-mentioned purpose, the electronic parts with a shielding

case of this invention (claim 1) They are the electronic parts with a shielding case with which the surface mounted device carried on the substrate has the structure held in the shielding case. The substrate with which the engagement crevice for shielding case attachment of the shape of a partial through tube which constitutes a part of through tube from which the thickness direction turns into abbreviation shaft orientations (following "engagement crevice") was established in two or more locations of a side face, The surface mounted device carried on said substrate, and the surface mounted device loading side of said substrate A wrap case body, When it has two or more engagement pawls inserted in the engagement crevice of said substrate and a predetermined engagement pawl is made to insert and engage with the predetermined engagement crevice of a substrate The shielding case which has a configuration which a deflection produces is provided, and it is characterized by two or more engagement pawls of said shielding case grasping the substrate with the energization force by elasticity.

[0008] While establishing an engagement crevice in the side face of a substrate and forming two or more engagement pawls in a shielding case When the engagement pawl is made to engage with the engagement crevice of a substrate, a shielding case By a deflection's arising and considering as a configuration to which an engagement pawl engages with an engagement crevice with the energization force by elasticity It becomes possible to become possible to grasp a substrate certainly, for the attaching position precision to the substrate of a shielding case to be high, to excel in the shielding engine performance, and to obtain electronic parts with a shielding case with high mounting dependability moreover with two or more engagement pawls inserted in the engagement crevice of a substrate. In addition, when the engagement pawl given to the shielding case is made to insert and engage with the engagement crevice of a substrate in the electronic parts with a shielding case of this invention, a configuration which a deflection produces is a large concept meaning various configurations, such as a configuration which a deflection produces on the engagement pawl of a shielding case, and a configuration which a deflection produces on a case body or a configuration which a deflection produces on both an engagement pawl and a case body. In addition, in the electronic parts with a shielding case of this invention, it may be formed in one from one member, and another member is connected, and a case body and an engagement pawl may be unified.

[0009] Moreover, the electronic parts with a shielding case of claim 2 are characterized by preparing the height or the ups-and-downs section which engages with the engagement crevice of said substrate in the engagement pawl of said shielding case.

[0010] It becomes possible to make a shielding case engage with the engagement pawl of a shielding case certainly by preparing a height or the ups-and-downs section in the engagement crevice of a substrate, and the installation reinforcement to the substrate of a shielding case is raised, and it becomes possible to offer electronic parts with a shielding case excellent in the attaching position precision of a shielding case, the shielding engine performance, mounting dependability, etc.

[0011] Moreover, the electronic parts with a shielding case of claim 3 are characterized by being constituted so that a shielding case may be fixed to a substrate by having a configuration which projects from the inferior-surface-of-tongue side of a substrate, and bending the part projected from the inferior-surface-of-tongue side of this substrate, when said engagement pawl is inserted in the engagement crevice of said substrate.

[0012] considering as a configuration which projects from the inferior-surface-of-tongue side of a substrate when the configuration of an engagement pawl is inserted in the engagement crevice of a substrate, becoming possible to certainly fix a shielding case to a substrate in a production process, when the part projected from the inferior-surface-of-tongue side of a substrate is bent, and preventing certainly generating of the location gap of a shielding case in a subsequent process -- possible -- becoming -- this invention -- further -- efficiency -- oh, it can close.

[0013] Moreover, the electronic parts with a shielding case of claim 4 are characterized by forming in the inner skin of the engagement crevice of said substrate the step which engages with the engagement pawl of said shielding case.

[0014] By forming in the inner skin of the engagement crevice of a substrate the step which engages with the engagement pawl of a shielding case, it becomes possible to raise the engagement dependability to the engagement crevice of an engagement pawl, and it becomes possible to raise further the dependability over attaching position precision, shielding engine performance, etc. of a shielding case, mounting dependability, etc.

[0015] Moreover, the land electrode for electrical installation with a shielding case is prepared on the outskirts of an engagement crevice of the surface mounted device loading side of said substrate, and the electronic parts with a shielding case of claim 5 are characterized by the part and this land electrode of a shielding case being connected by solder.

[0016] raising the dependability of electrical installation by preparing the land electrode for electrical installation with a shielding case on the outskirts of an engagement crevice of the surface mounted device loading side of a substrate, and connecting the part and this land electrode of a shielding case with solder -- possible -- becoming -- this invention --

further -- efficiency -- oh, it becomes possible to close.

[0017] Moreover, the electronic parts with a shielding case of claim 6 are characterized by giving the solder plating or the tinning for raising soldering nature to the part soldered to said land electrode of said shielding case.

[0018] It becomes possible to raise the soldering nature of a shielding case and to raise the dependability of electrical installation further by using the shielding case which gave solder plating or tinning for the part soldered to the above-mentioned land electrode.

[0019]

[Embodiment of the Invention] Hereafter, the gestalt of operation of this invention is shown and the place by which it is characterized [the] is explained in more detail.

[0020] The perspective view showing the electronic parts with a shielding case (for example, RF electronic parts, such as VCO used for communication equipment etc.) which [operation gestalt 1] drawing 1 requires for 1 operation gestalt of this invention, and drawing 2 are the perspective views showing the manufacture approach.

[0021] As the electronic parts with a shielding case of this operation gestalt are shown in drawing 1 and 2, the surface mounted device 2 (drawing 2) carried on the substrate 1 has the structure held in the shielding case 3.

[0022] And the engagement crevice 4 for shielding case attachment (following "engagement crevice") of the shape of a partial through tube formed by cutting the sheet substrate (parent substrate) 11 with which the through tube (through hole 12 (drawing 2) in which the electrode was arranged by inner skin) from which the thickness direction of a substrate 1 turns into abbreviation shaft orientations was formed in the side face of the substrate 1 which constitutes these electronic parts with a shielding case is established in two or more places. Moreover, the land electrode 8 for electrical installation with opposite partial 3a of a shielding case 3 is formed on the outskirts of engagement crevice 4 of surface mounted device loading side 1a of this substrate 1.

[0023] Moreover, the shielding case 3 is equipped with two or more engagement pawls 6 inserted in the case body section 5 which holds a surface mounted device 2, and each engagement crevice 4 of a substrate 1. And when that engagement pawl 6 is made to engage with the engagement crevice 4 of a substrate 1, a deflection arises on the case body 5 and the engagement pawl 6, and this shielding case 3 is constituted so that an engagement pawl may engage with an engagement crevice with the energization force by elasticity. That is, a shielding case 3 is formed in the side-face part which the case body 5 counters mutually, spacing between the engagement pawl 6 which carries out a right pair, and 6 is formed in the side face in_which a substrate 1 counters mutually, and it has the configuration and the dimension which becomes smaller than spacing of the engagement crevices 4 and 4 which carry out a right pair mutually, and each engagement pawl 6 is in the condition opened outside slightly, and it is constituted so that it may engage with the engagement crevice 4.

[0024] Furthermore, the height 7 which rose in the shape of a wen (the shape of a partial solid sphere) is formed in the engagement crevice 4 of the engagement pawl 6 of a shielding case 3, and the field which counters so that it can be made to engage with the engagement crevice 4 of a substrate 1 more certainly (refer to drawing 3).

[0025] Therefore, in the electronic parts with a shielding case of this operation gestalt, in order that two or more engagement pawls 6 of the shielding case 3 inserted in the engagement crevice 4 of a substrate 1 may grasp a substrate 1 with the energization force by elasticity, it becomes possible about a shielding case 3 to certainly fix to a substrate 1, without producing a location gap.

[0026] Moreover, the solder plating or the tinning for raising soldering nature is given to the land electrode 8 arranged on the outskirts of engagement crevice 4 of a substrate 1 of a shielding case 3, and partial (opposite part) 3a which counters.

[0027] In the electronic parts with a shielding case of this operation gestalt constituted as mentioned above When two or more engagement pawls 6 of the shielding case 3 inserted in the engagement crevice 4 of a substrate 1 grasp a substrate 1 with the energization force by elasticity Since the shielding case 3 is certainly being fixed to the substrate 1, and the attaching position precision to the substrate 1 of a shielding case 3 is high, and it excels in the shielding engine performance and a location gap of the shielding case 3 at the time of mounting is also controlled, high mounting dependability is securable.

[0028] Moreover, it is also possible to connect electrically the land electrode 8 of a substrate 1 and opposite partial 3a of a shielding case 3 with solder in the case of the electronic parts with a shielding case of this operation gestalt, and while becoming possible to raise the dependability of electrical installation in that case, it becomes possible to also raise the reinforcement of mechanical connections.

[0029] Moreover, as shown in drawing 4 , it is also possible to constitute the engagement pawl 6 of a shielding case 3 so that it may connect and fix to the electrode arranged in the engagement crevice 4 of a substrate 1 with solder 9. In this case, since connection immobilization of the engagement pawl 6 of a shielding case 3 is certainly carried out to the

engagement crevice 4 of a substrate 1 with solder 9, it becomes possible to raise the dependability of connection of a shielding case 3 further.

[0030] Next, the manufacture approach of the electronic parts with a shielding case of this operation gestalt is explained.

** Prepare the sheet substrate (parent substrate) 11 with which the through hole 12 was formed in the position, and the land electrode 8 was formed around the through hole 12 of surface mounted device loading side 1a first.

** And carry a surface mounted device 2 on the sheet substrate 11, and solder the electrode of a surface mounted device 2 to an electrode, a circuit (not shown), etc. on the sheet substrate 11.

** Next, sag the case body 5 and the engagement pawl 6 of a shielding case 3 so that the distance between the engagement pawls 6 with which a shielding case 3 counters mutually may become large, insert the engagement pawl 6 into a through hole 12 (engagement crevice 4), and make it engage with a through hole 12 (engagement crevice 4), where the engagement pawl 6 is joined by the energization force by elasticity.

** Obtain each electronic parts with a shielding case as shown in drawing 1 by cutting the sheet substrate 11 along with the predetermined line (cutting plane line) A after that by a dicing machine etc.

[0031] in addition, as shown in drawing 4, when the engagement pawl 6 of a shielding case 3 manufactures the electronic parts with a shielding case by which connection immobilization was carried out to the engagement crevice 4 of a substrate 1 with solder 9 For example, before inserting the engagement pawl 6 of a shielding case 3 in the through hole 12 (engagement crevice 4) of the sheet substrate 11 at the process of the above-mentioned ** After pouring soldering paste into a through hole 12 and inserting the engagement pawl 6 of a shielding case 3 in a through hole 12, Electronic parts with a shielding case as shown in drawing 4 can be obtained by heating, carrying out melting of the soldering paste, soldering a shielding case 3 to the sheet substrate 11, and cutting the sheet substrate 11 by a dicing machine etc.

[0032] In addition, although the above-mentioned operation gestalt explained to the engagement pawl 6 taking the case of the case where the height 7 which rose in the shape of a wen (the shape of a partial solid sphere) is formed, it is possible for there to be no constraint special to the configuration of a height, and to consider as various configurations.

[0033] Moreover, instead of preparing a height, as shown in drawing 5, it is possible to bend the engagement pawl 6 and to acquire the same effectiveness also by forming the ups-and-downs section 17 which the part projected. In addition, it is possible to consider as the various configurations which there is no constraint special to the configuration of the ups-and-downs section, and it engages with the engagement crevice of a substrate, and can grasp a substrate certainly. In addition, it is also possible to consider as the configuration which forms neither the above heights 7 nor the ups-and-downs section 17, and also in such a case, since the engagement pawl 6 engages with the engagement crevice 4 with the energization force by the deflection (elasticity) of a shielding case 3, it is possible to acquire the attaching position precision of an appropriate shielding case.

[0034] [Operation gestalt 2] Drawing 6 is the perspective view showing the important section of the electronic parts with a shielding case concerning other operation gestalten (operation gestalt 2) of this invention again. In the electronic parts with a shielding case of this operation gestalt 2, as shown in drawing 6, ups-and-downs section 17a which step 4a which engages with the engagement pawl 6 of a shielding case 3 is arranged by the inner skin of the engagement crevice 4 of a substrate 1, and engages with the point of the engagement pawl 6 of a shielding case 3 with step 4a of the inner skin of the engagement crevice 4 is formed.

[0035] In the electronic parts with a shielding case of this operation gestalt 2 While forming in the inner skin of the engagement crevice 4 of a substrate 1 step 4a which engages with the engagement pawl 6 of a shielding case 3 Since ups-and-downs section 17a which engages with step 4a of the inner skin of the engagement crevice 4 is formed in the point of the engagement pawl 6 of a shielding case 3 It can become possible to raise the engagement dependability to the engagement crevice 4 of the engagement pawl 6, and the attaching position precision of a shielding case 3, the shielding engine performance, mounting dependability, etc. can be raised further. In addition, it is possible to constitute so that the engagement pawl 6 may be fixed with solder in the engagement crevice 4 of a substrate 1 also in the case of the electronic parts with a shielding case of this operation gestalt 2.

[0036] [Operation gestalt 3] Drawing 7 is the sectional view showing the important section of the electronic parts with a shielding case concerning the operation gestalt of further others of this invention (operation gestalt 3) again. When the configuration of the engagement pawl 6 of a shielding case 3 is inserted in the engagement crevice 4 of a substrate 1, the electronic parts with a shielding case of this operation gestalt 3 are made into a configuration which projects from the inferior-surface-of-tongue side of a substrate 1, and they bend partial 17b projected from the inferior-surface-of-tongue side of a substrate 1, and as shown in drawing 7, they are constituted so that a shielding case 3 can certainly be fixed to a substrate 1.

[0037] By bending partial 17b projected from the inferior-surface-of-tongue side of the substrate 1 of the engagement pawl 6 like the electronic parts with a shielding case of this operation gestalt 3, in a production process, it becomes possible to certainly fix a shielding case 3 to a substrate 1, and it becomes possible to prevent certainly generating of the location gap of a shielding case in a subsequent process. In addition, it is possible to constitute so that the engagement pawl 6 may be fixed with solder in the engagement crevice 4 of a substrate 1 also in the case of the electronic parts with a shielding case of this operation gestalt 3.

[0038] In addition, although it explained with each above-mentioned operation gestalt taking the case of the case where cut the sheet substrate 11 and it is made to divide into each electronic parts with a shielding case after performing loading of a surface mounted device 2, and installation of a shielding case 3 using the sheet substrate 11 It is also possible to constitute so that the substrate divided into each electronic parts may be used, without there being no constraint special to the manufacture approach of the electronic parts with a shielding case of this invention, and using a sheet substrate depending on the case.

[0039] Moreover, although each above-mentioned operation gestalt explained taking the case of the case where RF electronic parts, such as VCO used for communication equipment etc., are manufactured, this invention can be applied also when manufacturing the electronic parts of other classes further.

[0040] In other points, it is not further limited to each above-mentioned operation gestalt, and this invention can add various application and deformation within the limits of the summary of invention about the pattern and others of the arrangement location of a substrate and the concrete configuration and concrete configuration of a shielding case or a component, a claw part, and an engagement crevice, a configuration, and a land electrode.

[0041]

[Effect of the Invention] As mentioned above, the electronic parts with a shielding case of this invention (claim 1) While establishing an engagement crevice in the side face of a substrate and forming two or more engagement pawls in a shielding case When the engagement pawl is made to engage with the engagement crevice of a substrate, a shielding case By a deflection's arising and considering as a configuration to which an engagement pawl engages with an engagement crevice with the energization force by elasticity It becomes possible to become possible to grasp a substrate certainly, for the attaching position precision to the substrate of a shielding case to be high, to excel in the shielding engine performance, and to obtain electronic parts with a shielding case with high mounting dependability moreover with two or more engagement pawls inserted in the engagement crevice of a substrate.

[0042] Moreover, like the electronic parts with a shielding case of claim 2, it becomes possible to make a shielding case engage with it certainly in the engagement crevice of a substrate, when a height or the ups-and-downs section is prepared in the engagement pawl of a shielding case, the installation reinforcement to the substrate of a shielding case is raised, and it becomes possible to offer electronic parts with a shielding case excellent in the attaching position precision of a shielding case, the shielding engine performance, mounting dependability, etc.

[0043] Moreover, like the electronic parts with a shielding case of claim 3, when the configuration of an engagement pawl is inserted in the engagement crevice of a substrate Consider as a configuration which projects from the inferior-surface-of-tongue side of a substrate, and when the part projected from the inferior-surface-of-tongue side of a substrate is bent, it sets to a production process. becoming possible to certainly fix a shielding case to a substrate, and preventing certainly generating of the location gap of a shielding case in a subsequent process -- possible -- becoming -- this invention -- further -- efficiency -- oh, it can close.

[0044] Moreover, when the step which engages with the engagement pawl of a shielding case is formed in the inner skin of the engagement crevice of a substrate like the electronic parts with a shielding case of claim 4, it can become possible to raise the engagement dependability to the engagement crevice of an engagement pawl, and dependability, mounting dependability, etc. over attaching position precision, shielding engine performance, etc. of a shielding case can be raised further.

[0045] moreover, the thing for which the dependability of electrical installation is raised when the land electrode for electrical installation with a shielding case is prepared on the outskirts of an engagement crevice of the surface mounted device loading side of a substrate and the part and this land electrode of a shielding case are connected with solder like the electronic parts with a shielding case of claim 5 -- possible -- becoming -- this invention -- further -- efficiency -- oh, it can close.

[0046] moreover, the thing for which the soldering nature of a shielding case is raised and the dependability of electrical installation is further raised like the electronic parts with a shielding case of claim 6 when the shielding case which gave solder plating or tinning to a part of part [at least] soldered to the land electrode of a substrate is used -- possible -- becoming -- this invention -- more -- efficiency -- oh, it can close.

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CLAIMS

[Claim(s)]

[Claim 1] They are the electronic parts with a shielding case with which the surface mounted device carried on the substrate has the structure held in the shielding case. The substrate with which the engagement crevice for shielding case attachment of the shape of a partial through tube which constitutes a part of through tube from which the thickness direction turns into abbreviation shaft orientations (following "engagement crevice") was established in two or more locations of a side face, The surface mounted device carried on said substrate, and the surface mounted device loading side of said substrate A wrap case body, When it has two or more engagement pawls inserted in the engagement crevice of said substrate and a predetermined engagement pawl is made to insert and engage with the predetermined engagement crevice of a substrate Electronic parts with a shielding case characterized by providing the shielding case which has a configuration which a deflection produces, and two or more engagement pawls of said shielding case grasping the substrate with the energization force by elasticity.

[Claim 2] Electronic parts with a shielding case according to claim 1 characterized by preparing the height or the ups-and-downs section which engages with the engagement crevice of said substrate in the engagement pawl of said shielding case.

[Claim 3] Claim 1 characterized by being constituted so that a shielding case may be fixed to a substrate by having a configuration which projects from the inferior-surface-of-tongue side of a substrate, and bending the part projected from the inferior-surface-of-tongue side of this substrate when said engagement pawl is inserted in the engagement crevice of said substrate, or electronic parts with a shielding case given in either of 2.

[Claim 4] Electronic parts with a shielding case according to claim 1 to 3 characterized by forming in the inner skin of the engagement crevice of said substrate the step which engages with the engagement pawl of said shielding case.

[Claim 5] Electronic parts with a shielding case according to claim 1 to 4 characterized by preparing the land electrode for electrical installation with a shielding case on the outskirts of an engagement crevice of the surface mounted device loading side of said substrate, and the part and this land electrode of a shielding case being connected by solder.

[Claim 6] Electronic parts with a shielding case according to claim 5 characterized by giving the solder plating or the tinning for raising soldering nature to the part soldered to said land electrode of said shielding case.

[Translation done.]